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ABSTRACT

This report on the use of the computer conferencing system CoSy begins with a summary of its application at the Open University in 1988, and describes the changes made for its use in 1989. An evaluation based on both quantitative statistics of usage and qualitative data from interviews and conference comments is made and compared with results from the first year. The similarities of students' reactions to the medium over the first 2 years are highlighted. The differences brought about by the changes in the second year are also analyzed: the content of the messages, the readership of the conferences, the management of the system, the improvement in communications, and the interactive nature of discussions. The paper then describes the major difficulties impeding further exploitation of the medium: the passivity of students, the limitations of the medium itself, and the difficulties of teaching practical work at a distance. The conclusion summarizes the overall success of the medium and a number of surprising benefits of its introduction at the Open University. (7 references) (GL)

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# Home Computing Evaluation

# USE OF COSY ON DT200, 1989

Robin Mason

CITE Report No. 99

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# Use of CoSy on DT200, 1989

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**Abstract**

This report on the use of the computer conferencing system, CoSy, begins with a summary of its application at the Open University in 1988, and describes the changes made for its use in 1989. An evaluation based on both quantitative statistics of usage and qualitative data from interviews and conference comments, is made and compared with results from the first year. The similarities of students' reactions to the medium over the two years are brought out: the logon rate, student attitude to conferencing, and the advantages of the medium. The differences brought about by the changes in the second year are also analysed: the content of messages, the readership of conferences, the management of the system, the improvement in communications and the interactive nature of discussions.

The paper then draws out the major difficulties impeding the further exploitation of the medium: the passivity of students, the limitations of the medium itself, and the difficulties of teaching practical work at a distance.

The conclusion summarises the overall success of the medium at the Open University, and includes a number of surprising benefits of its introduction.

*CITE Paper no 99, Centre for Information Technology in Education, Institute of Educational Technology, The Open University, Milton Keynes, January, 1990.*

# USE OF COSY ON DT200, 1989

Robin Mason

## BACKGROUND

The conferencing system, CoSy, has been used for the last two years at the Open University on the second level, course DT200, *Introduction to Information Technology*. This application has pioneered the use of computer conferencing for mass distance education. As other courses within the University are planning to use this medium, and as a number of refinements have been made to the application for its second year of presentation, it is important to evaluate the effectiveness of this use of conferencing and to make available the experience of the DT200 course team.

The evaluation of the first year of the CoSy on DT200 has been well documented (Thomas, 1989; Thorpe, 1989; Rumble, 1989; Mason, 1989a and b). In order to give an analysis of the changes in the 1989 presentation, a brief summary of the 1988 findings is necessary.

## FINDINGS FROM 1988

The course requires students to log on and send email and conference messages, and to work through a series of exercises designed to teach them the rudiments of the conferencing system CoSy. For the remaining six months of the course, the use of CoSy is largely optional, although tutors are expected to moderate discussions about course material, and to offer support and answer student queries. The tutor contract specifies a minimum requirement of one logon before each TMA due date, allows for eight hours of tutorial time on CoSy, and guarantees repayment for up to 20 hours of telephone connect time.

With virtually no precedents to follow in the first year, the course team decided to set up several conferences open to all 1300 students and 65 tutors - for discussing general course issues, for getting help with practical work, for socialising and for passing on important news - and 65 closed conferences for each of the tutors and their 20 to 25 students. The assumption was that the main discussion and tutoring would be carried out in these 'local' closed conferences. However, as the use of the system was largely optional, and most students found the main theoretical units of the course in addition to the other three software packages very demanding of their study time, only the most enthusiastic and dedicated CoSy-philes logged on frequently, and this proved too small a critical mass to sustain discussion in the tutor group conferences. The 200 or so regular

users gravitated to the 'national' open conferences, and discussion as well as practical help and socialising took place at this level. These topics became very over-loaded with messages and the infrequent users found it very difficult to participate or find their way around. The tutor group conferences were used largely for information exchange - about meetings, assignments and practical details, and the tutor was usually the main contributor. Some of the enthusiastic users exploited the new medium in very positive ways - setting up self-help support conferences, running an online journal and participating in topical conferences with other members of the university community. The use of CoSy in the first year can, therefore, be summarised as follows:

•Students made very unequal use of the medium - about a third logged on less than five times; another third used it more frequently but usually only to read other participants' comments, and the final third made extensive and often enthusiastic interactive use of the system.

•The primary value of the medium was the opportunity it provided for increased communication: students found it helped overcome the isolation of distance learning and made them feel part of an educational community; tutors were able to give direct feedback to the central staff and to take part in decisions about course presentation; the course team were for the first time in contact with the 'consumers' of their course, expanding on course themes, answering queries and coping directly with criticism and praise from students.

•The nature of the communication was often disappointingly banal, but the practical-help conference was very successful, the advice and feedback on assignments given by tutors and the course team was appreciated by students, and there were many discussions about course issues which extended or broadened the course perspective.

## CHANGES IN 1989

The course team in consultation with tutors and students, sought to resolve many of the problems which arose in the first year. The structure and educational objectives of the course, the financial constraints of the University and the technical limitations of the medium formed the boundaries within which changes could be made.

The chief drawback to this particular application of computer conferencing was that this very powerful medium had been relegated to a very minor part in the course - about 10 hours in a total of 400 study hours. However, as the University had not funded local call lines for all users, the cost of telephone charges to students was a major inhibiting factor in increasing its role on the course. Students living a long distance from the nearest dial-up node would be unfairly

disadvantaged if assignments had to be submitted online, if updating material, stop press announcements, or additional reading material were to be accessible only online, or if assignments involved significant online discussion. These kinds of changes to motivate students to use the system had to be rejected. Nevertheless, some encouragement was offered in the second year - 10% of the marks on one assignment were given for conference and mail entries, and assignments based on the student's discussion of chosen messages will be used in the third year. These changes are justified as assuring a minimum level of competency in using the medium.

After the experience of the first year, there was some pressure on the course team to reduce the workload on the 65 course tutors, who were trying to keep up with all the messages on the system as well as learning the art of conducting online tutorials. Because the conferences open to all the students contained far too many messages, and the conferences open only to the tutor and 25 students contained far too little discussion, a middle tier was introduced in the second year: these were called regional conferences. The 'national' open conferences were made optional; the small tutor group conferences were relegated to discussing local matters and assignments, and six regional conferences were introduced as the main forum for discussing course issues. Tutors were expected to take turns leading discussion, raising questions, developing the discussion, and summarising and interweaving comments. One 'super-tutor' was hired to oversee each of the six regional conferences, organise the seven other tutors, moderate the conference and add continuity to the whole process. It was hoped that the 200 or so students in each regional conference would provide the right critical mass for effective discussion.

A third area of change was in the management of CoSy. About half a dozen course team members made significant contributions to CoSy in the first year, and indeed the accessibility of central staff both to students and to tutors was one of the positive features of the application. Nevertheless, the inevitable technical problems with using communications, and the equally inevitable problems with new OU courses, as well as the general inexperience of everyone in organising a conferencing system for large numbers of students, resulted in a very chaotic management of this new medium in the first year. The ability of students to make queries, to criticise not only the course content but its delivery and presentation, exposed the course team and many of its practices to the 'heat of the fire' in a way which was ultimately very valuable, but extremely disconcerting at the time! This mismanagement had led to vital messages left unanswered, important messages in the wrong conferences and even non-use of the medium for sending critical information to students and tutors during the two postal strikes which occurred during the first year of the course. The second year resolved many of these teething problems with the appointment as the main conference manager of one member of the central staff, who tutored the course in the first year and therefore knew the course well, and who was a member of the maintenance team and therefore was abreast of current changes

and developments. In addition, the course manager was also available online, which led to a more cohesive maintenance team. Furthermore, a logical set of topics for technical matters was instituted, and queries were handled promptly by the Academic Computing Service of the University. All students were automatically joined to the read-only news conference where important messages from the course team were seen with the first carriage return. Finally, hitches and bugs in the software, identified by the 'guinea pigs' in the first year were rectified for the second, and significant improvements were made to the 'front end' developed by the course team to provide automatic logon, offline editing and optional online menus.

The DT200 conferences on CoSy in 1989 were as follows:

NATIONAL CONFERENCES:

| | |
|---|---|
| **DT200-0** | a read-only news bulletin board |
| **DT200-prac** | problems and queries with software, practical work, communications etc |
| **DT200-forum** | an optional conference for general course issues, and socialising |
| **DT200-morecosy** | instructions for advanced features of CoSy |

REGIONAL CONFERENCES:

| | |
|---|---|
| **DT200-Camelot** | regions 02 and 03 |
| **DT200-Chaucer** | regions 01 and 13 |
| **DT200-Hadrian** | regions 09 and 11 |
| **DT200-Hereward** | regions 05 and 06 |
| **DT200-Offa** | regions 04, 10 and 12 |
| **DT200-Roses** | regions 07 and 08 |

TUTOR CONFERENCES:

| | |
|---|---|
| **DT200-tut** | for all tutors, staff tutors and central staff |
| **DT200-supatuta** | for the 6 moderators of the regional conferences and the maintenance team |
| **DT200-....** | regional conferences for the staff tutor and the local tutors |

STUDENT CONFERENCES:

| | |
|---|---|
| **DT200-...** | 65 closed local tutor group conferences for discussion of TMAs, meetings, and queries. |

MAINTENANCE TEAM:

| | |
|---|---|
| **DT200-maint** | for posting agendas, minutes and discussion of assignment questions, preparing for meetings and communicating with all members. |

## EVALUATION OF THE SECOND YEAR

The data used in analysing the effect of these changes consisted of both quantitative and qualitative material. There were three sources of quantitative data: computer generated statistics of logon time and activity, summary data from the ACS help desk, and the DT200 project database consisting of 54 questions about student use and attitude's towards computer conferencing. The qualitative data was gathered from a variety of sources: the content of conference messages, 20 telephone interviews with 'dissatisfied' users of CoSy, the evaluations of the regional and national conferences carried out by different members of the maintenance course team and a summary report from Coco, the conferencing coordinator.

The presentation of this data will be made in the following format: the aspects of conferencing which remain roughly similar in both years, the improvements achieved in the second year, and finally the continuing difficulties presented by the use of the medium at the OU. To ground this evaluation in the context of the main 'consumers' of the product, a number of student profiles derived from interviews are presented first of all.

### STUDENT PROFILES

*Student A*: This student could be described as 'resistant to non-print media'. He began with the attitude that CoSy would be awful, and used it as little as possible. He "didn't bother" with Lotus 1,2,3, which was the spreadsheet software on the course. He rarely uses any of the non-print media on OU courses, though his marks are consistantly high. Time is his main problem, and every study hour has to be strictly controlled. He browsed once on CoSy, but found it far too time consuming.

*Student B*: This student had no previous experience with computers and found the time to master the practical work to be far in excess of what the course suggested. With a lot of patience and hard work, the support of her tutor and other students online, and a number of calls to the ACS helpdesk, she managed to reach a level of mastery by the end which left her very sorry to see the rented machine going back to KMS. Although she had experienced much exasperation with CoSy, she felt it had tremendous potential. Apart from the help with assignments and the project, she found the cameraderie and the sense of a closely knit tutor group developed online to be very valuable.

*Student C*: By contrast, this student was very experienced with computers and telecommunications. He found CoSy of very little use, and said he got nothing out of it, although he never entered any of the conferences. Nevertheless, he thought conferencing had a great future.

*Student D*: This student found that conference messages were too 'wishy-washy'. None of the messages contained facts or information essential to the course. He felt there should be right answers on exams and therefore, on CoSy. People were saying one thing and then contradicting it in the next sentence. No one was controlling conference messages to check for accuracy.

*Student E*: This student lives on a very remote island in the Shetlands and has never attended tutorials. She chose the course because she thought that computer conferencing would be a valuable tool for overcoming the disadvantage of isolation. She had no experience of computers and unfortunately the rented hardware arrived well after the course had started. With each of the four software packages, she had tremendous difficulties trying to distinguish her mistakes from connection problems or technical failures. She couldn't differentiate major misunderstandings from silly typing errors. The OU's help desk, which she rang when stuck, was very friendly, but often she couldn't understand their answers and was too shy to keep bothering them. Her vision of computer conferencing as a continuous summer school with lots of friends to help and chat to, seemed a long way off, and she desperately wanted someone in person to help her over the basics. She was about to give up the course when her tutor put her in touch with another student on a nearby island taking an OU computer course. He came over and gave her the help she needed to continue with the course. She began to go online very regularly and set up a CoSy 'conversation' with two other islanders. She contributed to her local tutor group conference, where she felt supported by her tutor, but confined herself to reading the regional conference, as she felt intimidated by the coherence and expertise of the other contributions. She began to enjoy logging on, adding a few short, spontaneous messages to the national conferences and emailing a few electronic friends. Through the CoSy conversation with the islanders and the practical help conference, she was able to get answers to most of her computing difficulties with the course. By the end of the course she felt tremendous pride in having gained a certain competence with computing, and was very sorry to have to return the modem. She felt that in another year she could really start to take advantage of it. Despite this, her overall reaction to computer conferencing was one of disappointment - it hadn't filled her expectation of a social community where friends were easy to meet and communication was uninhibited.

*Student F*: At the beginning, this student was very enthusiastic and logged on frequently. In his eight years with the OU, this was the most contact he had ever had with other students. He particularly valued the opportunity to read other students' ideas which were quite different from his own. Coming from a maths and technology background, he found conferencing especially useful for overcoming his 'correct answer' bias. Nevertheless, as time went on he became increasingly concerned about the cost of using CoSy as he accessed at the *b* band rate. He logged on less and less frequently.

Despite the fact that these profiles are drawn from students who were dissatisfied with CoSy, many of the advantages of the medium are apparent, as well as the difficulties.

## SIMILARITES IN THE RESULTS OF 1988 AND 1989

Computer-generated statistics of logon times and input to conferences show a number of differences from the first year and yet a basic similarity of use and participation.

| Time Online | 1988 students | 1989 students |
|---|---|---|
| none | 115 | 138 |
| up to 1 hr | 72 | 69 |
| 1-2 hrs | 94 | 88 |
| 2-3 hrs | 124 | 99 |
| 3-5 hrs | 213 | 215 |
| 5-10 hrs | 380 | 410 |
| 10-20 hrs | 259 | 171 |
| 20-30 hrs | 59 | 35 |
| 30-40 hrs | 24 | 7 |
| 40-50 hrs | 5 | 3 |
| 50-100 hrs | 12 | 3 |
| 100-200 hrs | 2 | 1 |
| TOTAL | 1364 | 1239 |

**Table 1**

| | | |
|---|---|---|
| 1988 | 27% | contributed to Forum conference |
| 1989 | 32% | contributed to regional conferences |

**Table 2**

Table 1 indicates that there was a greater bunching in 1989 around the specified 10 hour minimum allocated to online activities and hence less variation in usage from 1988. Nevertheless, the range of logon time for both years shows no dramatic differences. Likewise, although the national Forum conference in 1988 and the regional conferences in 1989 are not exactly comparable, and neither account for inputs to local tutorial conferences, Table 2 shows that the level of contribution did not rise dramatically in the second year - about a third of students inputting one or more messages into conferences. (Unfortunately, no statistics are available on the use of email.) Given the largely optional use of the medium on the course, and its very small part in a very overloaded course[1], it can probably be assumed that this level of activity and participation will remain constant through the life of the course.

There was some speculation that the first year intake of students might be in some respects different from subsequent years - more enthusiastic, more experienced with computers, more open to trying a new medium. Although no major decline in enthusiasm, experience or adaption to conferencing has been shown, the project database does indicate a number of trends in this direction. The initial expectations of students before using the system were slightly less positive in 1989 than in 1988:

•the mean expectation score on the waste-of-time to productive-use-of-time scale was 5.3 in 1989 and 5.5 in 1988 (the neutral response is 4.0, on a scale from 1 to 7)

•the mean score on the hard-to-learn to easy-to-learn scale was 4.1 in 1989 as compared with 4.4 in 1988

•the mean score on the impersonal to friendly scale was 3.6 in 1989 down from 3.8 in 1988.

Similarly, students' attitude to conferencing after using it for a few months was less positive in 1989 in a number of ways:

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[1]The Annual Survey of New Courses, (Lawless, 1989), shows that the overall interest rating for DT200 was above the 1988 new courses' average, but that workload was rated highest of any of the new courses, and very near the 'too much' level.

| Attitude | % of students in 1988 | % of students in 1989 |
|---|---|---|
| Less excited than initially | 41 | 52 |
| Less interested than initially | 18 | 28 |
| Less effective than tutorials for getting help with course difficulties | 60 | 66 |
| Less effective than tutorials for socialising | 72 | 79 |
| Less effective than telephone in getting help from tutor | 48 | 53 |
| Agree that CMC is depersonalising | 52 | 59 |
| Personal interaction more difficult | 70 | 80 |

**Table 3**

Ray Thomas, whose analysis of the differences between the data in both years of the project database is gratefully acknowledged, points out that the attitudes quantified in these questions are highly subjective, and all belong to the affective domain. By contrast he draws on a number of other questions to show that in some ways, students' attitudes to conferencing were more positive in 1989 than in 1988:

| Attitude | 1988 % of students | 1989 % of students |
|---|---|---|
| Less anxious than initially | 71 | 75 |
| Comfortable about contributing to a conference | 46 | 51 |
| Got this confidence after using the system 1 -5 times | 58 | 52 |
| Conferencing more expensive | 60 | 53 |
| Conferencing more time consuming | 54 | 46 |

**Table 4**

He notes that the attitudes expressed in Table 4 are somewhat more 'objective' than those in Table 3. Confidence in using the system can be cross tabulated with actual use of the system, for instance. He concludes that the overall pattern of change in student attitudes seems to be from a relatively enthusiastic level in 1988 towards a more matter-of-fact level in 1989. However, the changes in the pre-use attitudes may indicate a certain falling off in openness to trying new media.

In terms of the background experience of students in the two years, the project database gives the following information:

•The proportion of students who had completed the Technology Foundation Course was unchanged at 62%, but the proportion who had done the Social Sciences Foundation Course was 36% in 1989 as compared with 31% in 1988.

•The percentage of students classifying themselves as having no experience with micros was slightly higher in 1989 (19%) than in 1988 (17%), as was the proportion claiming never to have used a keyboard - (6%) in 1989 and only (4%) in 1988.

•The questions on the convenience of using the necessary equipment show a significant decline in 1989: 72% had their workstation permanently set up and always available in 1989 as compared with 78% in 1988, and 42% had the phone socket conveniently placed in 1989 as compared with 49% in 1988.

•The proportion of students with previous experience of computer communication was lower in 1989 (32%) than in 1988 (35%).

These changes seem to indicate a downward drift in the numbers of experienced, established computer users.

Data from CoSy messages and from interviews indicates that many of the same advantages from the first year of using conferencing remain valid for the second year: the social value of the medium, the increased access to help, the convenience of asynchronous communication for distance learners and the sense of being part of a university community. The following extracts give evidence of these values:

> I enjoy both modes of communication (face-to-face and conferencing), but thanks to the dynamic shift patterns operated by my employers, this year I have a lot to thank conferencing for. I cannot attend any tutorials and consequently I have managed to recoup some of the benefits of discussing issues with my peers through CoSy.
>
> There was more cameraderie within the tutor group because of CoSy. Getting marks and comments on assignments from my tutor online was a real advantage, and other students were often helpful as well.
>
> I came to DT200 really 'disadvantaged' - female, retired, aged 64, with no computer or typing experience. I also lived in a *b* band area and the tutorials 60 miles away. However, with an excellent tutor, I soon overcame my fear of the unknown and was able to lurk fairly regularly and read other people's comments. I soon became 'hooked' and at the end of the course purchased a computer and modem and have now joined the Alumni on CoSy. Although I have taken many OU courses, this is the only one in which I have really felt part of a University. I know it is costly (£94 in telephone costs), but I considered it a form of entertainment, so I could offset it against the cost of going out or to the pub.

These kinds of comments were also typical of the feedback from students in the first year (Mason, 1989a and b).

Tutors' use of CoSy was, because of the regional conferences, rather different in the second year, and yet the logon time overall was roughly similar:

| Total Online Time | Number of Tutors in 1988 | Number of Tutors in 1989 |
|---|---|---|
| up to 3 hrs | 1 | 2 |
| 3 - 5 hrs | 6 | 4 |
| 5 - 8 hrs | 8 | 6 |
| 8 - 15 hrs | 17 | 22 |
| 15 - 20 hrs | 12 | 14 |
| 20 - 30 hrs | 6 | 7 |
| 30 - 40 hrs | 8 | 4 |
| 40 - 50 hrs | 2 | 2 |
| 50 - 100 hrs | 5 | 1 |
| TOTAL | 65 | 62 |

**Table 5**

Table 5 shows that, as with students' logon time, there was a greater bunching of use around the minimum requirement - so less over-the-top enthusiasm, but equally, less absentee tutoring. As in 1988, some tutors made many excellent contributions, well beyond the call of duty, and a few did not even put in the statutory eight hours. Although very clear guidelines were sent to all tutors about how they were to use their online tutoring time, only 66% of them participated actively in the team teaching of the regional conferences. In some cases, tutors found that their students preferred the intimacy of the tutor group conferences and these tutors confined their activity to email and their own conference. Although there were fewer complaints from students about absentee online tutors in 1989, it is probably the case that a few tutors each year will not 'take up' the medium. Feedback from tutors strongly indicates the continuing need for local tutor group conferences, and some tutors themselves, prefer to tutor at this level.

## IMPROVEMENTS IN THE SECOND YEAR

Despite these similarities, a variety of improvement in the nature and quality of conferencing were apparent in the second year:

•*Content of Messages:* The regional conferences contained very few misplaced, irrelevant or inappropriate messages, which had so marred the conferences in the first year and irritated or put off many students. This improvement may have been due to the re-written manual, tape and explanatory material, and also to the greater expertise of the tutors and central staff. Whatever the reason, it was very noticable how quickly those students who participated, learned the basics of conferencing.

A content analysis of all the messages in two of the regional conferences was carried out by Tony Kaye in which he assigned each message to one of four categories. Each conference had just over 300 messages (325 and 311) and the percentage of messages in each category is shown below:

| Conference | Withdrawn | Process | Tech/admin | Socialising | Concepts |
|---|---|---|---|---|---|
| Offa | 3% | 20% | 21% | 16% | 39% |
| Hereward | 4% | 12% | 31% | 13% | 40% |

**Table 6**

These figures clearly show that the single largest category is the last - messages related to course concepts - and around 40% fall into this category. Socialising and chat messages were mainly confined to the chat topics, and discussion of conferencing, as a process in itself, did not swamp the other course issues. He concludes that these figures back up the impression from reading the conference transcripts, that discussion has been relatively well targetted on main course content issues.

•*Readership of conferences*: Data from the six regional conferences shows a very high level of lurking - over 80% of students read or contributed messages and around 35% made regular logons to keep up to date with messages. Table 7 shows the break down of participation through the various regional conferences. As the course has a 25% drop out rate (1988 and 1989), the proportion of 'live' students who never used their regional conference is really quite small.

| Conference | Total number of Students | % of Students who never entered | % of Students who read messages | % of Students who contributed |
|---|---|---|---|---|
| Camelot | 215 | 18% | 51% | 31% |
| Chaucer | 236 | 17% | 48% | 36% |
| Hadrian | 182 | 10% | 57% | 34% |
| Hereward | 214 | 15% | 48% | 36% |
| Offa | 191 | 36% | 39% | 25% |
| Roses | 205 | 18% | 50% | 32% |

**Table 7**

References to conference discussions were quoted in relevant assignments and many logons were made in the month before the exam, as students turned to

conference messages for hints, summary discussion or last minute advice. An analysis of the last date on which students in the Hadrian regional conference read or contributed messages is given as follows:

| Date of last visit | Number of Students |
|---|---|
| Never visited/withdrew from course | 18 |
| April | 5 |
| May | 16 |
| June | 5 |
| July | 15 |
| August | 20 |
| September | 40 |
| October | 68 |
| TOTAL | 182 |

**Table 8**

•*Management of the system*: The management of queries, requests, and course team news was handled with efficiency and speed, in contrast to the sometimes chaotic situation of the first year (Mason, 1989b). The report by the conferencing coordinator, Coco, says:

> I have had a lot of mail throughout the year covering a whole range of topics. A lot of it was parallel to stuff that appeared in conferences but Coco was obviously seen by some students as a figure of authority who might be able to produce results. (Incidentally some students clearly thought Coco was responsible for the whole course, could work miracles, and had access to decision making structures in the University!) Sometimes Coco seemed to be seen as a substitute tutor - so there were lots of messages asking for help about distribution dates, missing sections of blocks, tma papers etc. I was able to give some advice on using CoSy and really just reassure students and tutors about the system and the course. Finally, I do feel that being a tutor on the course has enabled me to deal with a lot of the problems that have come to Coco.

Administrative details of the course and changes relevant to all students were always immediately available in the read-only news conference, thus capitalising on the power of the medium for communicating with large numbers of dispersed students.

•*Support from ACS*: The conference on practical issues of the course (for problems with equipment, software and the network) was also more effective than the

first year. First of all, two members from ACS monitored the queries and most were answered within 24 hours - sometimes by other students. The conference also proved useful to ACS as a source of information on problems which they needed to investigate. Statistics show how useful it was to students: for instance in the first 3 days of July, 104 students had checked in to read messages.

The ACS student help desk continued to provide an invaluable hot line service for queries and difficulties. Although the DT200 calls were down by over a half in 1989, queries about CoSy, communications and the network remained roughly the same (the improvement being due to the rewritten practical work units on other parts of the course). The help given by the service was more valuable to students in 1989 according to the database answers: 39% turned to ACS in 1989 for support with problems, as opposed to 26% in 1988. Furthermore, 19% said that this service was the most helpful source of advice, up from 14% in 1988.

Improvements to the ACS modem performance seems to account for the considerably higher success rate of logons, as Table 9 shows: 79% of students reported a 9 out of 10 chance of connecting on their first attempt, as opposed to the 64% in 1988.

| Success in connecting | 1988 | 1989 |
|---|---|---|
| Almost always (90% or over) | 560 | 621 |
| Mostly successful (50% and over) | 277 | 152 |
| Mostly unsuccessful (less than 50%) | 36 | 18 |
| TOTAL | 873 | 791 |

**Table 9**

•*Support from previous students*: The setting up of Alumni - whereby 100 interested students from 1988 were allowed to maintain their ID on CoSy in exchange for providing support to the 1989 cohort - proved to be extremely successful. Several alumni asked to be joined to each of the regional conferences and invariably made timely, supportive and appropriate contributions.

•*Improved communication*: The availability of the course maintenance team both to tutors and to students, begun in the first year, has grown significantly in the second. Tutors have participated in the development of the course in ways unprecedented in OU history: through DT200-tut, the conference for tutors and the course team, the assignment questions for subsequent years have been

debated amongst tutors and many changes have been made on the basis of their feedback. Tutors have made suggestions, alerted the course team about errata, and expressed their opinions and summarised the views of their students. Maintenance team meetings are dominated by issues concerning CoSy, as feedback from students and tutors can be gained from CoSy, issues can be explained to students via CoSy, notifications to students and tutors can be given on CoSy, and difficulties and misunderstandings can be picked up from student messages on CoSy. In fact, CoSy is *the* communication medium of the course:

> The 'old' model whereby central staff may receive the odd critical comment from a tutor or student, which could be easily rationalised as being 'odd' in all senses of the word, has been rudely shattered. Any errors of omission or commission are likely to be made instantly public. . . Central staff will be judged not just upon the quality of the initial material they produce, but also how far they service it, and perhaps most importantly of all, the quality of the support they give to deliver the course. (Brown, 1988)

CoSy has also had effects on the role of the staff tutor, as Neil Costello of Region 06 reports:

> 1. The ability to converse with tutors in the region and develop a real team and cohesive unit is massively enhanced - we do genuinely talk to each other regularly and form something of a common room spirit.
>
> 2. Management of the tutor team is improved through greater opportunities to observe and participate in their work, and through the team building mentioned in 1. It is also much easier to develop things like Day School programmes, and once developed, to publicise the programmes through the local and regional conferences.
>
> 3. Access to colleagues at Walton Hall and in other regions is greatly improved. There is still a long way to go on this but it could, in my view, massively improve the effectiveness of our limited face-to-face meetings by allowing much of the business to be cleared or to be given a preliminary airing via CMC.
>
> 4. On courses, like DT200, where students use CMC we can gain access to student opinion and join in discussions in ways which are impossible face-to-face.
>
> 5. To use the medium effectively is time-consuming. A new social group and a new set of interactions appear. Until CMC can actually substitute for other work (as implied in 3), this is a big drawback to all but the enthusiasts.

•*Interactive discussion*: The amount of interactive discussion of course issues increased significantly in the conferences generally and quite dramatically in the case of one regional conference. Topical issues and relevant newspaper articles were discussed as well as personal experiences with Information Technology in the home and at work. On a number of occasions, the conference transcripts show real interactive dialogue, with students commenting on previous arguments, refining their own perspective, interweaving tangential comments from other students and debating conflicting points of view. The emergence of this kind of conferencing, which capitalises on the text-based, asynchronous aspect of the medium, is the strongest evidence of its value for learning at a distance. The following extracts from one of the regional conferences are given, not because they are typical, but because they show how conferencing can work at its best.

*Tutor A*: Title IT and Jobs in Education

In many spheres it seems that the main reason for introducing IT systems is to cut jobs and increase productivity by cutting overheads. I wonder if there is any indication of this being a motive in the field of education [*the subject of this block of the course*]. For example conventional universities seem to be regarded as very expensive luxuries by the present government. On the other hand the OU produces undergraduates in a very cost effective way. If it were possible to run down the conventional higher education sector and increase the distant learning component would this have an attraction for the government?

OOOOO

*Tutor B*: What is the problem with industrial sponsorship of courses? I suspect that if DT200 had been sponsored by BT (perhaps by giving students £50 of phone vouchers to encourage use of CoSy in return for more positive coverage of the company in the course material) very few students would really be that concerned. What about academic integrity I hear you cry! Well most courses contain an element of the values and perceptions of their authors so why should an influence from a commercial organisation be any different?

OOOOO

*Student 1*: I think [*Tutor B*] must be trying to 'set the cat among the pigeons' with his comment! I would agree that the values held by authors tend to come across in most writing. Surely then, the answer to [Tutor B's] query is that an 'influence' derived from a commercial interest could hardly be held to be objective and representative of the author's values. However, I suspect (no hard facts) that there could well be a majority of DT200 students willing

to take on the £50 voucher but not if they knew in advance that the course material would be biased in favour of that Company. However, I suppose it might be possible to accept sponsorship of a particular Company if a balanced or countering viewpoint is given.

OOOOO

*Student 2*: In view of the way IT has cut jobs and increased productivity in so many areas I have also wondered why the further education sector has not bought more computers and sacked more lecturers. Having watched the TV programme on Training in Banking I am quite sure that one of the reasons is the high initial capital investment both of hardware and software and the cost of the on-going monitoring. However, today during a discussion on a small computer based learning project, I discovered that when the software 'failed', it actually took 3 lecturers to sort out the ensuing mess. The prospect of more computers AND more lecturers would really be too much for the education authority.

OOOOO

*Student 3*: In the event of courses being sponsored, and bearing in mind [*Tutor B's*] point that 'most courses contain an element of the values and perceptions of their authors', would it then be acceptable that sponsored courses could also put forward the values and perceptions of the sponsor? and to what extent? I am cynical enough to believe that the personal attitudes of course writers could be stifled when being influenced by an industrial sponsor, and the values and perceptions expressed could be mainly those of the industrialist.

The person who pays the piper calls the tune, and the tune could be a requiem to the Arts and Social Science faculties, - that is a fear being expressed by the critics of sponsorship in education. To what extent would the curriculum be affected by sponsorship? If some courses are unpopular with sponsors, they may be tailored to attract funds, and the sponsor would then not only control the course content, but also the courses being taught.

Should the type of industrial sponsorship suggested by [*Tutor B*] be tolerated in education? I would say no - donors should not be allowed to target specific areas. Motivation by 'money' is not in itself automatically wrong, but when it applies to sponsorship in education, the intent must also be right. I suggest that it isn't money but the power which that sponsorship money would allow industrial sponsors to wield that should be the issue. The degree of control that comes with power and the responsible use of that

control should be given important consideration when weighing up the effects of industrial sponsorship in education.

OOOOO

*Student 1*: My instinctive reaction [*to Student 3*] is that I could not have said it better. Perhaps, though, we should have a look at the other aspects of industrial sponsorship in education and see if we are being unfair:

a) sponsorship of particular courses could release more money for targeting on 'other' courses unpopular with sponsors

b) the fact that a company sponsors a particular course would indicate that particular course as being a good choice, from the students' point of view, in terms of career openings.

These seem to be fairly valid points. However, point a) could depend on the political climate - it might be that Central Gov't grants are curtailed in line with increased industrial sponsorship. On point b), as stated in Block 4, industrialists have decreased the level of training they do in-house, and so particualr companies might go for sponsorship in certain designated areas because their own needs require specialist skills not catered for elsewhere.

Ultimately it comes back to the point of values - whether or not we should be educated for richer personal enhancement and capable of clear and discerning thought or made 'fit' for work.

OOOOO

*Student 4*: I think you [*Student 1*] have exposed a very significant blind spot here. . . Perhaps in real life, organisation such as the OU would poll a number of industries in order to ascertain a consensus of opinion on a general course theme, then tailor a course to suit the requirements of all.

OOOOO

*Student 3*: Thank you [*to Student 1*] for your interesting response to my comments. In fact I agree with a lot of your points, and would entirely go along with your point b) if it could be amended to read ...partially sponsors a particular course. . .[*he goes on to give his reasons*]

These shortened extracts give a flavour of how an interactive discussion on course issues can give students a chance to express their opinions, to formulate an argument and to respond to criticism and debate. It must be acknowledged that some students (see profile Student E) found the level of this discussion

intimidating, and a few tutors were unhappy about the alleged 'elitism' of the medium. This is obviously a Catch 22 situation - as the quality of debate and interaction on CoSy improves, some students will inevitably find participation more daunting. The solution to this dilemma lies in providing conferences for all levels of ability, not in abandoning the regional conferences. On the whole, the refinements made to the use of conferencing on DT200 have enhanced the value of the medium for students and staff. Within the confines of its minor role on the course, and as a tutorial rather than a course delivery medium, this application is beginning to exploit the educational potential of computer conferencing.

## CONTINUING DIFFICULTIES

There are three ways in which the further exploitation of the medium, particularly in mass distance education, is continually hampered: the alleged passivity of students, the limitations of the medium in its present stage of development, and the necessity of teaching practical work 'at a distance'.

### PASSIVITY OF STUDENTS

Computer conferencing by its very nature demands greater activity and initiative from its users than other educational media such as audio, video or even print. The extent to which students retain a passive view of learning, has obvious repercussions for the success of the conferencing medium. Some OU tutors have felt that their students' lack of participation reflects their expectation that the course should be packaged for them; others feel that, nevertheless, it is not appropriate to coerce adult students to participate actively; some think that the medium will, in time, produce a more active concept of learning. Students themselves, are not unaware of this issue, as the following extracts from CoSy messages show:

> I feel that, although you can pick up little snippits of useful info and views, there is not a great amount of course-related info that you haven't already gained from the printed units. Possibly we are all at fault for not asking enough questions or putting enough views of our own on.

> I log on to read messages, get tips on assignments and course news, but I have not contributed to discussions. This is because I am used to friendlier/quicker communication products using the Macintosh; I am pushed to get through the block reading and I too don't question the course material enough.

> The idea that shy students will fire off salvos of assertive and erudite interpolations from the safety of their CoSy trenches seems to have no foundation in what appears in messages so far. I suspect that students' attitude to contributing is determined at a much deeper level than teachers are aware of.
>
> There is a culture gap between OU students and the ideal CoSy user. CoSy probably works best for those who are willing to participate in the structuring, presentation and content of the academic material on the system. However, the 'typical' OU student is more used to the idea of passive learning with material neatly packaged and presented without any effort from the student (hence the large numbers browsing on CoSy).

However, telephone interviews with students revealed quite different views about learning and conferencing (see Student A, C, D ): that opinions and comments were wishy-washy, that there were no right answers, no facts, that people were just talking for the sake of it. Efforts to increase the participation rate in online discussions are clearly working against entrenched views of learning and understanding. Expecting students to suddenly become active and interactive learners with the availability of a new medium would be naive and unreasonable. The de-packaging of learning at a distance will need to be a gradual process.

## LIMITATIONS OF THE MEDIUM

As in the first year, students continue to complain about aspect of conferencing which limit its effectiveness. Technical difficulties such as failed connections, line noise, incompatibility of software are well known detractions. The linear nature of conference messages, the difficulty of browsing and getting an overview of the discussion are all features of the medium in its present stage of development, which inhibit users. Furthermore, the lack of spontaneity in reading and preparing messages offline, in order to reduce costs, continues to be a serious deterrent to many students.

> I log on every week and use the record facility to read the information later. I have to scan through the messages as I'm recording to be a little selective of the material downloaded. I then print out (unless it did not record for one of the many reasons it finds to get a sulk over!). By this time it is usually too late to read all but the most interesting entries properly, so they are filed away for later digesting. Many have not seen the light of day again due to other more important reading in the units. . . Replying to any of the messages would take even longer.

> Many conferences were full of unrelated comments. I tried to follow the flow but got disheartened and gave up. It is so linear I couldn't make sense of the discussion in the short time I had available.

> In a [face-to-face] forum where a few people have a common topic of interest it is enlightening to sit and listen, chipping in your views if they are thought out quickly enough, to hear different views on things and coming to understand and tolerate or concede that what you said does not conform to other ideas that you hold dear. CoSy is a distant second best for such a forum. I know it is better than no debate at all but it is so slow to input ideas and so much slower to get a reaction that many ideas are never thrown into the arena.

> Coming offline to compose a message is so time consuming, and if I wait til the next day to upload it, it doesn't seem appropriate anymore.

The student database shows that even more students in 1989 were obliged to access the ACS network at *b* band rates.

| Call band | 1988 | 1989 |
|---|---|---|
| local | 54% | 47% |
| a band | 25% | 25% |
| b band | 14% | 18% |
| b1 band | 3% | 5% |

**Table 10**

There is no doubt that, in the short to medium term, the cost of conferencing is the most serious limitation to the widespread use of the medium. Fortunately, in the longer term, this and many of the complaints described above, will be outdated with newer conferencing systems and 'front ends' which facilitate offline working and allow the user to customise the conferences, tailoring them to individual priorities.

## TEACHING PRACTICAL WORK AT A DISTANCE

DT200 can claim a very high success rate at teaching large numbers of students the rudiments of logging on and answering mail without the advantage of a hands-on tutorial. Four elements contributed to this success: the development of a 'front-end' to CoSy with an optional menubar, which even the most experienced students found very useful; the use of an audio cassette to talk students through the first few logons; a printed guide with detailed exercises for

new users and simple lists for experienced users, and the telephone assistance of ACS.

Nevertheless, turning large numbers of novice users into masters of the medium without the benefit of face-to-face contact is a difficult task. To a great extent the nature of the application - for tutorial support and optional after the first assignment - does not lend itself to developing efficient and effective users. Some students - about one third it would seem - will learn these skills and become enthusiastic, interactive users. However, many students still call for face-to-face contact either to get over the initial learning curve, or to establish a traditional relationship with the other users. For these students, contributing their own views in a conference message is like talking to people without first being introduced. Student E was a classic example of this difficulty. She was fortunate not to fall through the distance teaching gap - she received the face-to-face contact she needed to carry on herself. Doubtless there are some who abandon the course, or avoid the conferencing option, because the only teaching vehicle which would work for them is a knowledgeable person to take them through the basics, or a meeting with fellow participants to establish friendly relationships face-to-face.

## CONCLUSIONS

Computer conferencing suffers badly from the unrealistic expectations of its users and promoters. The motor car was only expected to be as good as the horse; computer conferencing is expected to provide the intellectual, social and information requirements of an entire university without one ever leaving the confines of one's own island. What are reasonable measures of success for a conferencing application? What can we reasonably expect students to gain from using conferencing? As a tutorial medium in mass distance education, can we really demand widespread use? Answers to these questions will probably change as the technology and this application are further refined.

At this point, however, there are many aspects of the application which are successful. At the practical level, the conferencing system and the access to it now function reasonably effectively; the vast majority of students learn to log on relatively quickly; and the front-end, OUCom, is clearly appreciated (64% of students rate it as very helpful and 31%, quite helpful). At the educational level, interaction and discussion of course issues, as well as the social environment created for the support and encouragement of learning, are highly successful for at least a third of the students. The database shows that 58% of students would be interested in continuing to use the medium after DT200, and of these 12% are very enthusiastic.

There are a number of surprising benefits to the University apart from the value of the medium to students. By increasing the tutors' contact with students and central staff, and by involving them in decisions about the development of the course, and by making their expertise available to a wider audience, the role of tutors in the OU system can be greatly enhanced. Both the recent national meeting of the Teaching and Counselling Staff and the University's Academic Review have called for this kind of enhancement. Similarly, the liaising functions of staff tutors can be immensely facilitated through the medium, as well as their communications with the course team and interactions with students. Most significant of all, is the way in which conferencing changes the nature and scope of course maintenance. The accountability of the course team to students and tutors through the new open communication channels, and the greater opportunity for updating, revising and broadening a course through this medium, as well as the extension of the closed boundaries around traditional maintenance teams to include tutors, staff tutors, and even students, all of these are new departures with significant implications for the practice of course maintenance.

The OU application has shown that computer conferencing is a viable medium in tutoring large numbers of students at a distance; the refinements to its use and the growth in understanding of the medium have shown that conferencing can provide a valuable learning environment. The difficulties which still impede its use are a reminder that the medium is not yet fully exploited by the mass of students.

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